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Research: Animal Reproduction Gynaecology & Obstetrics

1. List of Research Projects: Completed & Ongoing

Sr. No.	Title of the Project	Name of PI/ Major Advisor/ Research Worker	Funding Agency	Total Cost of the project (Rs in Lakh)	Extra-mural (Funding agency) / Intra-mural	Status (Completed/ Ongoing)	Duration
1	Network programme on Embryo Transfer Technology in Animal Production	Dr. C.H. Pawshe	ICAR, New Delhi	Rs 90.66/- lakhs.	Extra Mural	Completed	1996 to 2002
2	Establishment of ultrasound guided transvaginal oocyte retrieval (TVOR) from cows and buffaloes for in vitro embryo production	Dr. C.H. Pawshe	DST New Delhi,	Rs 49.25/- lakhs.	Extra Mural	Completed	2000 to 2004
3	Oestrus Synchronization in cattle	Dr. C.H. Pawshe Dr. M.V. Ingawale Dr. S.G. Deshmukh	MLDB	Rs. 58.85 lakhs	Extra Mural	Completed	March 2008- July 2009
4	Sustainable rural livelihood security (SRLS) through integrated approach in Hingoli and Nanded districts of Maharashtra	Dr. C.H. Pawshe Dr. M.V. Ingawale Dr. S.G. Deshmukh	NAIP- ICAR	Rs. 130.625 lakhs	Extra Mural	Completed	Dec. 2008 to July 2013



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2. List of Private Agency Projects:

Sr. No.	Title of the Project	Name of PI/ Major Advisor/ Research Worker	Funding Agency	Total Cost (Rs in Lakh)	Extra-mural	Status	Duration
1	Fertility assessment of sexed semen in buffaloes	Dr. M.V. Ingawale Dr. C.H.Pawshe	ATMA, Akola	Rs. 1 Lakh	Extramural	Completed	13.11.19 to 31.03.21
2	Evaluation of the efficacy of some uterine cleansers and herb-enriched calcium supplement in buffaloes	Dr. M.V. Ingawale Dr. C.H.Pawshe	Ayurvet Pvt. Ltd. Baddi	Rs. 1.40 Lakhs	Extramural	Completed	01.01.21 to 05.01.23
3	Use of sexed semen in synchronized animals versus animals exhibiting natural estrous under field conditions on Gir, Sahiwal and Jersey cross of Vidarbha region of Maharashtra	Dr. S.G. Deshmukh Dr. C.H. Pawshe Dr. M.V. Ingawale	M/S-Genus Breeding India Pvt. Ltd., Pune)	Rs. 2.80 Lakhs	Extramural	Completed	20.12.21 to 31.03.24

2. Research Priorities:

Sr. No.	Research Area	Aim	Objective	Benefits of Farmers
1	Reproductive Biotechnology	To produce superior germplasm	1.To study the efficacy of different treatment regimes to improve the fertility of recipient cows 2. To study the fertility of sex-sorted semen at field level	1.High merit germplasm will be produced 2.Superior female calves production at farmers doorstep
2	Fertility improvement in farm animals	Improvement of the reproductive potential of farm animals	To improve the reproductive potential of farm animals by adaptation and modification of different synchronization protocols	The fertility of farm animals will be improved for the implementation of a calf a year programme



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3. Thesis:

Master:

Sr. No.	Name of the student	Title of thesis	Name of the Major Advisor	Year
1	Deshmukh S.G	Superovulatory response with once daily injection of FSH-P in crossbred cows	R.K.Patil	2000
2	Patil M.S	Comparative efficacy of two different prostaglandin F ₂ α analogues: Dinoprost and Luprostiol for inducing synchronized oestrus in Nagpuri buffaloes.	C.H.Pawshe	2000
3	Patil A.T.	Studies on synchronization of oestrus with prostaglandin F ₂ α analogue in non descript cows	S.K.Sahatpure	2000
4	Ghotekar K.V.	Fertility response with frozen semen in Berari buffaloes after synchronization with PGF ₂ α	S.A.Chede	2000
5	Khotte S.R.	Fertility response in goats after synchronization of oestrus with PGF ₂ alpha analogue (Lutalyse)	C.H.Pawshe	2001
6	Waquar Ahmed Razzaque	Superovulatory response with daily single injection of FSH-P in Polyvenilpyrolidone vehicle in crossbred cows.	S.K.Sahatpure	2001
8	Ratnaparkhi A.R.	Effect of different doses of FSH-P (Folltropin-V) on superovulatory in Berari (Nagpuri) buffaloes.	C.H.Pawshe	2002
9	Javed Khan	Impact of cross breeding through Artificial Insemination centers managed by sugar factory of Wardha district	C.H.Pawshe	2002
10	Nikam P.T.	Synchronization of estrus using PGF ₂ α in buffaloes during summer season	S.K.Sahatpure	2002
11	Patil S.R.	Ultrasonographic imaging to monitor early pregnancy diagnosis and embryonic developments in crossbred cattle	C.H.Pawshe	2003
12	Zanjad D.K.	Effect of Receptal (GnRH) on anoestrus crossbred heifers	M.F.Fashiuddeen	2003
13	Choudhari A.J.	Studies on use of electronic probe Draminski to detect heat in crossbred cows and to monitor optimum time of insemination.	S.K.Sahatpure	2003
14	Sontakke S.S.	Studies on biometry of follicles and biochemical study of follicular fluid in non descript goats	C.H.Pawshe	2004
15	Athare K.A.	Studies on effect of Heparin on in-vitro capacitation and acrosome reaction of spermatozoa in crossbred bulls	C.H.Pawshe	2004
16	Shaikh Irfan Fathru	Comparative studies on use of electronic probe and teaser to detect heat in Murrah buffaloes	S.K.Sahatpure	2005
17	Shahare T.Y.	Early pregnancy diagnosis by electrical resistance of vaginal mucosa in crossbred cattle	S.K.Sahatpure	2006
18	Patil M.G.	Efficacy of prostaglandin analogue on induction of estrus and ovarian follicular dynamics in crossbred cows	K.P.Khillare	2006
19	Pardhi S.M.	Ultrasonographic detection of embryo and its development in crossbred cattle	S.K.Sahatpure	2006
20	Mahajan N.N.	Effect of different electrical stimuli on seminal parameters in Black Buck (Antelope cervicapra)	S.K.Sahatpure	2007



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21	Musale V.N.	Comparative study between PGF ₂ α and GnRH+ PGF ₂ α protocol for estrus synchronization in crossbred cows	C.H.Pawshe	2007
22	Adlak S.A.	Effect of different sera with FSH and oestradiol on <i>in vitro</i> maturation of buffalo oocytes	K.P.Khillare	2007
23	Lalge R.R.	Ultrasonographic study on follicular development during PGF ₂ α and GnRH+PGF ₂ α protocol for estrus synchronization in crossbred cows	C.H.Pawshe	2007
24	Bombatkar R.S.	Effect of ethylene glycol concentrations on survivability and in-vitro maturation of vitrified thawed immature buffalo (<i>Bubalus bubalis</i>) oocytes.	C.H.Pawshe	2008
25	Raut P.B.	In vitro maturation of morphologically classified goat oocytes	C.H.Pawshe	2008
26	Tijare G.S.	Ovarian response after treatment with herbal preparation in post partum anestrous crossbred cattle	S.K.Sahatpure	2008
27	Deshmukh S.P.	Effect of different concentrations of cryoprotectant and equilibration time on vitrification and <i>in vitro</i> maturation of immature buffalo (<i>Bubalus bubalis</i>) oocytes	C.H.Pawshe	2009
28	Girhepunje B. S.	Oestrus synchronization in buffaloes with PGF ₂ α and GnRH + PGF ₂ α (Ovsynch) protocol in field condition	C.H.Pawshe	2009
29	K.Vanlalpeka	Comparative evaluation of frozen semen thawing methods on post thaw sperm attributes in bovine	C.H.Pawshe	2009
30	Ikhar A.M.	Improving reproductive efficiency in normal cyclic cows by using PGF ₂ α and GnRH under field condition.	M. V.Ingawale	2010
31	Makode S.B.	Improving reproductive efficiency in normal cyclic cows by using PGF ₂ α and hCG under field condition	C.H.Pawshe	2010
32	Ramteke S.S.	Synchronization of ovulation by using GnRH, PGF ₂ α and hCG in normal cyclic cows under field condition	C.H.Pawshe	2010
33	Kurundwade J. J.	Effect of thawing methods on post thaw sperm attributes in buffalo bull	C.H.Pawshe	2011
34	Navrange P.P.	Effect of flunixin meglumine on conception rate in estrous synchronized buffaloes	M.V.Ingawale	2011
35	Pawshe M. D.	Oestrus synchronization in goats using intravaginal progestogen sponges under field condition	M.V.Ingawale	2012
36	Kundulkar A.D.	Synchronization of estrus and ovulation using Ovsynch, CIDR and Ovsynch plus CIDR in anestrous buffaloes	M.V.Ingawale	2013
37	Sawarkar P.P.	Effect of GnRH, flunixin meglumine and meloxicam on pregnancy establishment in buffaloes under field condition	C.H.Pawshe	2013
38	Bhopse P.P.	Effect of estrogen and progesterone on follicular dynamics during induction of lactation in crossbred cattle	C.H.Pawshe	2014



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39	Arbal R.W.	Early pregnancy diagnosis and embryonic developments in thoroughbred mares	M.V.Ingawale	2014
40	Raut M.R.	Ultrasonographic monitoring of uterine involution and post partum fertility in cows treated with PGF ₂ α	M.V.Ingawale	2014
41	Meshram G. S.	Optimization of synchronization protocols in buffaloes under field conditions.	R.L.Dhoble	2014
42	Sayeed Anwar Ali	Therapeutic efficacy of <i>Tinospora cordifolia</i> and <i>Achyranthes aspera</i> on subclinical endometritis in cow.	S.G.Deshmukh	2016
43	Wankar M.S.	Fertility evaluation after clomiphene citrate and Ovsynch protocol treatment in buffalo heifers	M.V.Ingawale	2016
44	Bind A. A.	Estrus synchronization and fertility assessment using different protocols of intravaginal progestogen sponges in goats.	H.S. Birade	2016
45	Hirole P. D.	Fertility improvement through different hormonal protocols in postpartum dairy cows	S.G.Deshmukh	2017
46	Dalvi V. B.	Polymorphism of fsh beta subunit gene (fsh β) and their association on semen quality in jersey and Holstein Friesian crossbred bulls	M.V.Ingawale	2017
47	Iyer K. B.	Polymorphism of gonadotropin releasing hormone receptor gene (gnrhr) and their association on semen quality in Holstein Friesian	M.V.Ingawale	2017
48	Nikhade C. T.	Comparative efficacy of different herbal extract on subclinical endometritis in postpartum cows	S.G.Deshmukh	2018
49	Shinde G. S.	Association of follicle stimulating hormone receptor (FSHR) gene polymorphism with fecundity in goats	M.V.Ingawale	2018
50	S.Y.Ramteke	Dietary supplementation of fish oil and its effect on semen quality in dogs	S.G.Deshmukh	2020
51	S.D. Kale	Effect of maturation media on early embryonic development of goat immature oocytes	C.H.Pawshe	2020
52	S.B.Harkal	Effect of different vacume pressures on oocyte recovery and in vitro maturation of oocytes collected by ultrasound guided trans vaginal follicular aspiration in cattle	C.H.Pawshe	2020
53	S.D.Kudalkar	Detection of ovulation time and effect of administration of HCG after mating on litter size in bitches	M.V.Ingawale	2020
54	L R.Pawaskr	Comparative Efficacy Of <i>Achyranthes Aspera</i> (Aghada) And <i>Allium Sativum</i> (Garlic)Extract On Subclinical Endometritisin Cattle	S.G.Deshmukh	2021
55	S.S.Sawant	Effect Of Sexed And Conventional Semen On Pregnanacy Rate In Murrha Buffaloes Under Field Condition	M.V.Ingawale	2021
56	P.M.Shinde	Fertility Assesment Of Sexed And Conventional Semen In Fixed Time Artificial Insemination Protocol In Gir Cows	M.V.Ingawale	2021



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57	M.B.Ambalkar	Effect Of Media And Capacitating Agent On <i>In Vitro</i> Fertilization Of Goat Oocytes	C.H.Pawshe	2021
58	Anshu Sharma	Fertility Improvement Through CIDRBased Ovsynch Protocol In Postpartum Cows	S.G.Deshmukh	2022
59	S.G.Munde	Effect of soybean oil supplementation on estrus attributes in repeat breeding cows	S.G.Deshmukh	2022
60	A.S.Dahatonde	Fertility of Sexed Semen in Ovsynch and Double PG Ovsynch Protocols in Buffaloes	M.V.Ingawale	2022
61	R.S.Sangale	Effect Of Different Culture Media On <i>In Vitro</i> Embryonic Development Of Goat Oocytes	C.H.Pawshe	2022
62	A.S.Kathe	Ovarian dynamics and follicular blood flow during synchronized and spontaneous estrus in buffaloes	M.V.Ingawale	2023
63	V.P.Bhoye	Fertility assessment of sexed semen with synchronized and spontaneous estrus in crossbred cows	S.G.Deshmukh	2023
64	M.M.Bawane	Comparative evaluation of post thaw sperm attributes of frozen conventional and sexed semen in bovine	C.H.Pawshe	2023
65	S.R.Chavan	Fertility assessment with different sites of insemination with sexed semen in cow	S.G.Deshmukh	2024
66	M.D. Barde	Fertility of male sex-sorted semen during modified Ovsynch protocols in Khillar cows.	M.V.Ingawale	2024
67	A.D. Giri	Assessing the effect of vaccination on sperm attributes and sperm DNA fragmentation in post-thaw semen of bovine	C.H.Pawshe	2024
69	A.D. Bhujbal	Pregnancy outcome in embryo transferred recipient cows synchronized with Ovsynch and double PG Ovsynch protocols	M.V.Ingawale	2025
70	S.R.Gopchade	Efficacy of human chorionic gonadotrophin (hCG) treatment at the time of embryo transfer on pregnancy rate in recipient cows	M.V.Ingawale	2025
71	S.S.Pawar	Pregnancy rate in flunxin meglumine treated recipient cows during and after embryo transfer	S.G.Deshmukh	2025
72	H.B. Jagtap	assessment of anti-mullerian hormone concentration with relation to antral follicle count and in vitro embryo production in sahiwal cattle	C.H.Pawshe	2025

Doctoral:

Sr. No.	Name of the student	Title of thesis	Name of the major advisor	Year
1	Waqar Ahmed Razzaque	Studies on morphological structures of Nagpuri buffalo ovaries along with changes in the uterine structure during various reproductive stages	S.K.Sahatpure	2004
2	Patil M.S.	Effect of epididymal histological changes on sperm morphology in Nagpuri buffalo bull	S.K.Sahatpure	2006
3	Nandankar U. A.	Follicular dynamics, corpus luteal growth and regression in Purnathadi (Nagpuri) buffaloes	C.H.Pawshe	2013
4	Deshmukh S.G.	Reproductive performance of cows supplemented	M.V.Ingawale	2017



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		with dietary polyunsaturated fatty acids during postpartum period”		
5	Patil M G	Seminal attributes , cryopreservation and fertilizing ability of cryopreserved semen of Berari bucks	M.V.Ingawale	2019
6	Ratnaparkhi A R	Modulatory effect of crushed soybean and flaxseed supplementation on reproductive performance and prostaglandin metabolite in postpartum crossbred dairy cows	S.G.Deshmukh	2021
7	Kale V.B.	Reproductive performance and endocrine profile in Berari goats	C.H.Pawshe	2022

4. Research Papers Published:

List of Research Publications:

Sr. No.	Title of Paper	Authors	Name of Journal, Vol. No., Year	NAAS Rating
1	<i>In vitro</i> maturation and fertilization of denuded buffalo oocytes with cumulus cells monolayer	C. H. Pawshe, S. R. Kale, M. V. Ingawale and S. G. Deshmukh	Buffalo Bulletin. 29(4): 256-261. 2010	
2	Superovulatory response with once and twice daily injection of Follitropin-V in crossbred cows.	Deshmukh S.G. C.H.Pawshe,S,K,Sahatpure and R.K.Patil	Indian Journal of Animal Science. Vol 80 (9): 851-853. 2010	
3	Types of damages on buffalo oocytes after vitrification with different concentration of ethylene glycol and dimethyl sulphoxide	S.P.Deshmukh, C.H.Pawshe, M.V.Ingawale, S.G.Deshmukh and S.R.Kale	Indian Journal of Animal Sciences. 81(10):28-31. 2011	
4	Ultrasonography: A diagnostic tool for detection of early pregnancy and study of embryonic development in buffalo and cattle	C. H. Pawshe, S. R. Patil and M. V. Ingawale	Intas Polivet. 12 (1):1-4. 2011	
5	Studies on progesterone levels in pregnant and non pregnant Murrah buffaloes	M.V.Ingawale, S.A.Bakshi, H.S.Birade, S.R.Chinchkar and S.U.Gulavane	Indian Buffalo Journal. 9(2): 10-12. 2011	
6	Role of Vitamin E and Selenium in bovine reproduction	M.V.Ingawale and C.H.Pawshe	The Blue Cross Book.26: 1-8. 2012	
7	Studies on estrous response and symptoms exhibited in Ovsynch synchronization protocol in buffaloes	P.P. Navrange, M.V. Ingawale, C.H. Pawshe, S.G. Deshmukh and V.K. Munde	The Blue Cross Book.26: 53-59. 2012	
8	Efficacy of Ovsynch protocol for fertility augmentation in buffaloes	P.P. Navrange, M.V. Ingawale, C.H. Pawshe, S.G.	The Indian Journal of Field Veterinarians. 8 (1) : 38-	4.47



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	under field condition	Deshmukh and V.K. Munde	40.2012	
9	Complete Uterine Inversion in a Goat.	M. V. Ingawale, J. J. Kurundwade and C. H. Pawshe	Indian Journal of Small Ruminants. 18 (2): 273-274.2012	
10	Studies on follicular development in Murra buffaloes with retention of placenta	M.V.Ingawale, S.A.Bakshi, H.S.Birade, S.R.Chinchkar and S.U.Gulavane	Buffalo Bulletin 31(4):193-201.2012	
11	Early detection of pregnancy using ultrasonography in buffaloes	M.V.Ingawale, S.A.Bakshi, H.S.Birade, S.R.Chinchkar and S.U.Gulavane	Buffalo Bulletin 31(4):202-208.2012	
12	Estrus synchronization using different PGF ₂ α protocols in cows.	Ikhar A.M., Ingawale, M.V., Pawshe, C.H. and Deshmukh, S.G.	The Blue Cross Book Vol. 27: 30-32.2012	
13	Efficacy of COX-2 inhibitor on 32conception rate in buffaloes.	P. P. Navrange, M. V. Ingawale, C .H. Pawshe, S.G. Deshmukh and V.K. Munde	Indian J. of Animal Reproduction. 33 (2): 64-66.2012	
14	Synchronisation of estrus with double dose of PGF ₂ in cows	S.G.Deshmukh,C.H.Pawshe, S.K. Sahatpure and P.S. Bankar	Indian J.Field Vet. Vol. 9 (2):59-61. 2013	
15	Efficacy of intravaginal progestogen sponges for oestrus synchronization in goats.	M. D. Pawshe, M.V. Ingawale, C.H. Pawshe, S.G. Deshmukh, V.K. Munde and S.D. Kharche	The Indian Journal of Field Veterinarian 8(4): 14-17.2013	
16	Fertility improvement through synchronization of oestrus in cows.	A.M. Ikhar, M.V. Ingawale, C.H. Pawshe and S.G. Deshmukh.	Indian J. of Animal Reproduction. 34 (1): 13-16.2013	
17	Conjoint twins foetus in a surti buffalo-A Case rept	S.G.Deshmukh and S.S.Mehesare	The Indian Journal of Field Veterinarians 10 (1): 81-83.2014	
18	Efficacy of PGF ₂ alpha and hCG for improving reproductive performance in cyclic cows under field condition	S.B. Makode, C.H. Pawshe, S.G. Deshmukh and M.V. Ingawale	The Indian Journal of Field Veterinarian 9 (4): 58-61 .2014	
19	Synchronization response and conception rate with Ovsynch protocol in buffalo under field condition.	B.S. Girhepunje, C.H. Pawshe, S.G. Deshmukh and M.V. Ingawale	The Indian Journal of Field Veterinarian 10 (2): 13-15. 2014	
20	Effect of GnRH and PGF ₂ alpha administration in early post-partum period on fertility potential of buffaloes	M.V.Ingawale, S.A.Bakshi, H.S.Birade, S.R.Chinchkar and S.U.Gulavane	Buffalo Bulletin 33(2):228-232.2014	
21	Efficacy of cloprostenol sodium administration during early post partum period on uterine involution in cow	M.R. Raut, M.V. Ingawale, S.G. Deshmukh and Arbal R. W	The Blue Cross Book. 32:39-42 2015	
22	Successful expulsion of mummified fetus in a cow.	Ingawale M.V.	The Blue Cross Book. 32:98-99.2015	
23	Studies on embryonic development in thoroughbred	R.W. Arbal, M.V. Ingawale, S.G. Deshmukh and S.W.	The Indian Journal of Veterinary Science and	



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	mares	Hajare	Biotechnology (formerly IJFV) 11 (2): 11-14. 2015	
24	Detection of preovulatory follicle size and early pregnancy by using ultrasonography in thoroughbred mares during foal heat.	R.W. Arbal, M.V. Ingawale, S.G. Deshmukh and S.W. Hajare	Indian J. of Animal Reproduction. 36 (1): 42-45. 2015	
25	Ovulation synchronization for improving fertility in post-partum dairy cows.	S.G. Deshmukh, S.A. Bakshi, M.V. Ingawale and S.D. Chepte	The Indian Journal of Veterinary Science and Biotechnology (formerly IJFV) 10 (4): 9-11. 2015	
26	Effect of early post-partum GnRH and PGF2 alpha administration on follicular activities in Murrah buffaloes	M.V. Ingawale and S.A. Bakshi.	Buffalo Bulletin. 35(3):171-177. 2016	
27	Impact of cloprostenol sodium treatment during early post partum period on fertility in dairy cattle.	M.R. Raut, M.V. Ingawale, S.G. Deshmukh, S.W. Hajare and R.S. Ingole	Indian J. of Animal Reproduction. 37 (1): 39-40. 2016	
28	Dystocia due to complete uterine inertia in German Shepherd bitch	Watane, T.M., Ingawale, M.V., Dalvi, V.B., Iyer, K.B. and Hirole, P.D.	The Blue Cross Book. 34:98-99. 2016	
29	Ultrasonographic studies of follicular activities in clomiphene citrate treated anestrus cows.	Manjusha Patil, M.V. Ingawale, H.S. Birade and A. Syed Anwar	The Indian Journal of Veterinary Science and Biotechnology (formerly IJFV) 12 (2): 48-50. 2016	
30	Absence of potential benefit of progesterone priming during Ovsynch protocol in post-partum anestrus buffalo near the end of breeding season.	A.D. Kundulkar, M.V. Ingawale, S.G. Deshmukh, S.W. Hajare and R.S. Ingole	Indian Journal of Animal Reproduction. 37(2):61-62. 2016	
31	Effect of Dietary Supplementation of Crushed Flaxseed and Soybean Oil on Ovarian Functions in Postpartum Jersey crossbred Cows.	Deshmukh, S.G., Ingawale M.V., Birade H.S., Thorat M.G., Kuralkar S.V. Rekhathe D.H., Mode S.G. and Chepte S.D.	The Indian Journal of veterinary Science and Biotechnology Vol.12(3):118-123. 2017	
32	Successful treatment of dystocia due to Perosomus elumbis fetal monster in cow- A case report	Manjusha G. Patil, M.V. Ingawale, P.B. Hase and H.S. Birade	Indian Journal of Animal Health. 56(2):271-274. 2017	
33	Efficacy of clomiphene citrate ovsynch protocol treatment on fertility during summer season in buffalo heifers	M.S. Wankar, M.V. Ingawale, S.W. Hajare and R.S. Ingole	International Journal of Veterinary Sciences and Animal Husbandry. 2 (5): 21-23. 2017	
34	Estrus synchronization using CIDR protocol in post partum anestrus buffaloes during summer season	A. D. Kundalkar, M.V. Ingawale, S.W. Hajare and R.S. Ingole	International Journal of Agricultural Sciences and Veterinary Medicine. 5 (4): 94-97. 2017	
35	Fertility improvement by Presynch protocol in postpartum dairy cows	Hirole, P.D., Deshmukh S.G., Ingawale M.V., Thorat M.G., Kuralkar S.V. and	International Journal of Science, Environment. 6 (6): 3354-3361. 2017	



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		Ratnaparkhi , A. R.		
36	Dystocia due to Dicphalus Atlodymus Polymelia foetus in Murrah buffalo	Ingawale M.V., Deshmukh, S.G., Thorat M.G., Raulkar R.V., Syed Anwar Ali and Mohammed Ali.	The Blue Cross Book. 36(2): 83-84. 2017	
37	Association of FSH beta gene polymorphism on testicular parameters and semen quality in HF and Jersey crossbred bulls	V. B. Dalvi, M. V. Ingawale, S. G. Deshmukh, S. V. Kuralkar, P. S. Bankar, S. S. Ali, R. S. Ingole and S. W. Hajare	International Journal of Livestock Research. 8 (06): 41-47. 2018	
38	Comparative efficacy of two different synchronization protocols in postpartum dairy cows	Hirole, P.D., Deshmukh, S.G., Ingawale, M.V., Kuralkar, S.V., Thorat, M.G., Ratnaparkhi, A.R. and Godbole, P.V.	International Journal of Livestock Research. 8(11):283-290. 2018	
39	Dystocia due to Arthrogryposis calf in cow	M.V. Ingawale, R.V. Raulkar and S.D. Chepte	The Blue Cross Book. 38: 111-112. 2018	
40	Successful management of post-partum complete eversion of uterus in buffalo	M.V. Ingawale, V.B. Dalvi, K.B. Iyer, Moiz Siddqui, A.R. Ratnaparkhi and S.P. Waghmare	The Blue Cross Book. 38: 113-115. 2018	
41	Successful management of uterine torsion in sheep	S.B. Harkal, M.V. Ingawale, S.D. Kale, S.Y. Ramteke, C.H. Pawshe and S.P. Waghmare	The Blue Cross Book. (38): 116-117. 2018	
42	Studies on seminal attributes of Berari bucks	M.G. Patil, M.V. Ingawale, H.S. Birade, S.V. Kuralkar, S.P. Waghmare and S.W. Hajare	Journal of Entomology and Zoology Studies. 7(2): 85-88. 2019	
43	Detection of early pregnancy and twinning in goats	G.G. Shinde, M.V. Ingawale, C.H. Pawshe, R.S. Ingole and S.W. Hajare.	The Indian Journal of Small Ruminants. 25(1): 121-123. 2019	
44	Follicle stimulating hormone receptor gene polymorphism and its association with fecundity in goats	Gayatri Shinde, Maheshkumar Ingawale, Shailendra Kuralkar, Pravin Bankar, Sajid Ali, Sunil Hajare and Ranjit Ingole	Indian Journal of Animal Sciences. 89 (7): 798–800. 2019	
45	Association of GnRH receptor gene polymorphism on testicular parameters and semen quality in HF crossbred bulls	K.B. Iyer, M.V. Ingawale, S.V. Kuralkar, P.S. Bankar, S. Sajid Ali, R.S. Ingole, S.W. Hajare and C.H. Pawshe	Indian Journal of Animal Research. 53 (9): 1140-1143. 2019	
46	Effect of frequency of follicular aspiration on recovery of oocytes and follicular development	S.B. Harkal, C.H. Pawshe, M.V. Ingawale, S.G. Deshmukh, M.B. Ambalkar and S.D. Kale	Journal of Entomology and Zoology Studies. 7(6): 568-571. 2019	



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47	Effect of thawing methods on post thaw seminal attributes in bulls	K. Vanlalpeka, C.H. Pawshe, M.V. Ingawale and S.G. Deshmukh	Journal of Bombay Veterinary College. 26(1): 36-39.2019	
48	Fetal Ascites: Unusual case of dystocia in buffalo	S.B. Harkal, M.V. Ingawale, M.B. Ambalkar, P.M. Shinde, C.H. Pawshe and S.G. Deshmukh	Journal of Bombay Veterinary College. 26(1): 65-66.2019	
49	Successful management of cloacal prolapse in Turtle	S.B. Harkal, N.P. Bhawe, M.V. Ingawale, M.B. Ambalkar, C.H. Pawshe and S.G. Deshmukh	Journal of Bombay Veterinary College. 26(1): 75-76.2019	
50	Management of post-partum complete eversion of uterus in graded Murrah buffalo	Maheshkumar V Ingawale, Moiz Siddiqui, M. G.Thorat, S.P.Waghmare and C.H.Pawshe	Buffalo Bulletin 39(1):125.128.	
51	Efficacy of Exfoliative Vaginal Cytology and Progesterone Assay on Fertility in Bitches.	S.D.Kudalkar, M.V. Ingawale, C.H. Pawshe, S.W. Hajare, R.S. Ingole and S.P. Waghmare.	World Journal of Veterinary Science.8:36-39.2020	
52	Effect of maturation media on early embryonic development of goat immature oocytes	S. D. Kale, C.H. Pawshe, H.S. Birade, M.V. Ingawale, S.G. Deshmukh, S.B. Harkal and M.B. Ambalkar.	Journal of Entomology and Zoology Studies. 8(1): 1345-1348. 2020	
53	Studies on reproductive performance of Berari goats.	Kale, V.B., Pawshe, C.H., Ingawale, M.V., Deshmukh, S.G., Thorat, M.G., Panchbhavi, G.J. and Ratanparkhi, A.R.	Journal of Entomology and Zoology Studies. 8(3): 1282-1284.2021	
54	Effect of dietary supplementation of crushed soybean and flaxseed on ovarian response in postpartum crossbred dairy cows.	A.R. Ratnaparkhi, S.G. Deshmukh, C.H.Pawshe, M.V.Ingawale, M.G.Thorat, S.V. Kuralkar, M.S.Patil, V.B.Kale and S.D.Chepte	Journal of Entomology and Zoology Studies. 9(2): 710-713.2021	
55	Characterization of ejaculates from Berari male goats in breeding season	Manjusha G Patil, M V Ingawale, P B Hase, S V Kuralkar and M A Gole	Journal of Entomology and Zoology Studies. 9(1): 1811-1814.2021	
56	Reproductive traits in Berari goats in Vidharbha region of Maharashtra	Vaijnath B Kale, Chaitanya H Pawshe, Mahesh V Ingawale, Shyam G Deshmukh, Milind G Thorat and Sunil P Waghmare.	Indian Journal of Veterinary Science and Biotechnology. 17(1): 82-84.2021.	
57	Effect of Dietary Supplementation of Crushed Soybean and Flaxseed on Estrus Attributes in Postpartum Crossbred Cows	Anand R Ratnaparkhi, Shyam G Deshmukh, Chaitanya H Pawshe, Mahesh V Ingawale, Milind G Thorat, Shailendra V Kuralkar, Manoj S Patil, Anil U Bhikane, Sunil P Waghmare.	Indian Journal of Veterinary Science and Biotechnology. 17(1): 79-81.2021	



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58	Effect of Dietary Supplementation of Crushed Soybean and Flaxseed on Estrus Attributes in Postpartum Crossbred Cows	Anand R Ratnaparkhi, Shyam G Deshmukh, Chaitanya H Pawshe, Mahesh V Ingawale, Milind G Thorat, Shailendra V Kuralkar, Manoj S Patil, Anil U Bhikane, Sunil P Waghmare	Indian Journal of Veterinary Science and Biotechnology. 17(1): 79-81.2021	
59	Efficacy of human Chorionic Gonadotrophin (hCG) hormone on litter size in bitches	M.V. Ingawale, C.H. Pawshe, S.W. Hajare, R.S. Ingole and S.D. Kudalkar.	Indian Journal of Canine Practice. 13 (2): 60-62. 2021	
60	Effect of Sex Sorted Semen in Synchronized Estrus on Pregnancy Rate and Female Ratio in Gir Cows	P.M. Shinde, M.V. Ingawale, C.H. Pawshe, S.P. Waghmare, S.W. Hajare, R.S. Ingole	Indian Journal of Animal Research. Online published dated 14.01.2022-10.18805/IJAR.B-4793.2022	
61	Successful management of pre partum cervico vaginal prolapsed concurrent with dystocia due to incomplete cervical dilation in Surti buffalo: A case report	Ruchika R Sangle, Maheshkumar V Ingawale, S G Deshmukh and C.H.Pawshe.	Acta Scientific Veterinary Sciences. 4(3): 52-55. 2022	
62	Effect of Sexed and Conventional Semen on Pregnancy Rate in Murrah Buffaloes under Field Condition	Sujata S. Sawant, Manjusha G. Patil, Maheshkumar V. Ingawale, Pankaj B. Hase.	Indian Journal of Veterinary Science and Biotechnology. 18(4): 143-144.2022	
63	To evaluate the therapeutic efficacy of <i>Achyranthes aspera</i> (Aghada) and <i>Allium sativum</i> (Garlic) extract on subclinical endometritis in crossbred cows	Lajari Pawaskar, S.G. Dehmukh, C.H.Pawshe, M.V. Ingawale, S.V.Kuralkar and S.W.Hajare.	The Pharma Innovation. 11(12): 5196-5199.2022.	
64	Pregnancy rate and sex-ratio of calves born to sex sorted semen in Murrah buffaloes	Maheshkumar Ingawale, Sujata Sawant, Akshay Dhatonde, Shyam Deshmukh and Chaitanya Pawshe	The Indian Journal of Animal Reproduction. 43 (2): 36-39. 10.48165/ijar.2022.43.2.8. 2022	
65	Management of Fetal Dystocia by Partial Fetotomy in Mare	Manoj Bawane, Maheshkumar Ingawale, Ratnkar Raulkar, Aboli Kathe, Shyam Deshmukh and Chaitanya Pawshe	The Indian Journal of Animal Reproduction. 43(2):77-79. 10.48165/ijar.2022.43.2.18. 2022	
66	Efficacy of Second Prostaglandin F2 Alpha Treatment during Ovsynch Protocol on Pregnancy Rate Inseminated with Sex-sorted Semen in Buffaloes	A.S.Dhatonde, M.V. Ingawale, C.H.Pawshe, S.G.Deshmukh, S.W.Hajare, R.S.Ingole.	Indian Journal of Animal Research. Online 08.02.2023-10.18805/IJAR.B-5025.2023.	
67	Ovarian dynamics blood flow indices during estrus in Purnathadi buffaloes	Aboli S Kathe, Maheshkumar V Ingawale, Shyam G Deshmukh, Chaitanya H Pawshe, Sunil W Hajare and Ranjit S Ingole	Indian Journal of Animal Reproduction. 44(1):1-5. 10.48165/ijar.2023.44.01.3. 2023	



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68	Effect of dietary supplementation of Soyabean oil on reproductive performance repeat breeder cows	S.G. Munde, S.G. Deshmukh, C.H.Pawshe, M.V. Ingawale, S.V. Kuralkar and K.Y. Deshpande	Animal Nutrition and Feed Technology. 23: 577-588. 2023	
69	Fertility assessment of sexed semen with synchronized and spontaneous estrus in cross-bred cows	V.P. Bhoje, S.G. Deshmukh, C.H. Pawshe, M.V. Ingawale, M.G. Thorat and P.S. Bankar	Indian Journal of Animal Research. doi: 10.18805/IJAR. B-5196. 2024	
70	Comparative efficiency of different culture media on <i>in vitro</i> embryonic development of Goat oocytes	Ruchika R. Sangale, Chaitanya H. Pawshe Megha B. Ambalkar, Shyam G. Deshmukh, and Mahesh V. Ingawale	Indian Journal of Animal Research. DOI: 10.18805/IJAR. B-5220.	

List of Marathi and Popular articles published:

Sr. No	Authors	Name of article	Magzine	Year & Vol.	Page No.
1	M.V.Ingawale	Ultrasonography dware prajanan vyavasthanamathe honare fayde	Krushipatrika	April,2017	06
2	M.V.Ingawale	Shelyamathe narache khachikaran V shelya madhe majache yekatrikarnache mahatva	Krushipatrika	May,2017	12-13
4	R.S.Ingole, M.V.Ingawale and S.W.Hajare	Janavradware ustejrit honarya methaan vauche yavsthapan	Sakal Agrowan	30.05.2017	12
5	R.S.Ingole, M.V.Ingawale and S.W.Hajare	Janavrana pavsalyat honare rog	Krishi King	Aug-Sept. - 2017	47-50
6	M.V.Ingawale	Nivad jativant dudhal mashichi	Sakal Agrowan	3.01.2018	12
7	M.V.Ingawale	Mashichya arogya sathi Gotha rachna mahatvachi	Sakal Agrowan	10.01.2018	12
8	M.V.Ingawale	Samtol aaharatun vadhel dudh utpadan	Sakal Agrowan	17.01.2018	12
9	M.V.Ingawale	Mashina khadyasobat dya khanij mishrane	Sakal Agrowan	24.01.2018	12
10	M.V.Ingawale	Mashiche pramukh aajar,pratibandhatmak lasikaran	Sakal Agrowan	31.01.2018	12
11	M.V.Ingawale	Vyavsaik,sastriya drushtikonatun kara prajanan vyavasthapan	Sakal Agrowan	07.02.2018	12
12	M.V.Ingawale	Nirogi shashakt vasrasathi vyavsthapan baddal aavashak	Sakal Agrowan	14.02.2018	12
13	M.V.Ingawale	Unhadyat mashichi ghya kalji	Sakal Agrowan	21.02.2018	12



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14	M.V.Ingawale, R.S.Ingole, S.W.Hajare	Gaila ata fakt kalawadich hotel	Baliraja	Feb.2018	46
15	R.S.Ingole, M.V.Ingawale, S.W.Hajare	Lasikaran: Yashashvi pashupalancha mantra	Baliraja	Feb.2018	66-67
16	S.W.Hajare, R.S.Ingole, M.V.Ingawale	Janavarmadhil Jant yamule honare dushparinam va upay	Baliraja	Feb.2018	70-72
17	M.V.Ingawale	Lasikarnatun rokha brucellosis rogacha prasar	Sakal Agrowan	07.03.2018	12
18	M.V.Ingawale	Maispalantil samasyvar prbhavi upay yojana	Sakal Agrowan	14.03.2018	12
19	M.V.Ingawale	Masichya charchi posikata vadavnasathi uriya prikriya	Sakal Agrowan	21.03.2018	12
20	M.V.Ingawale	Uttam vanshavalikarita krutrim retan	Sakal Agrowan	28.03.2018	12
21	M.V.Ingawale	Chartanchaimadhe mashina dya murgash	Sakal Agrowan	04.04.2018	12
22	M.V.Ingawale	Adhunik maispalanakarita lagnari upkarne	Sakal Agrowan	11.04.2018	12
23	M.V.Ingawale	Arthik nuskan talnyakarita kada masicha vima	Sakal Agrowan	18.04.2018	12
24	M.V.Ingawale	Dughdyajany padartchya vikritun miwa adik nafa	Sakal Agrowan	09.05.2018	12
25	M.V.Ingawale	Shalimadil krutrim retan	Sakal Agrowan	15.06.2018	12
26	M.V.Ingawale	Ling vargikrut retnadvare dugdotpanat vad	Pashudhan Aishvarya	Sept. 2018	27
27	S.W.Hajare, Sapana Jamgade and M.V.Ingawale	Janavarana Honarya Vanspatijanya Vishbadha: Pratibandh va Upay	Krishi Patrika	Nov. 2019	11
28	M. V. Ingawale, Sunil Hajare and Ranjit Ingole	Sankraman kalamadhe dudhal gayiche vyavasthapan	Agrotuch	July 2020	31-33
29	M. V. Ingawale, Sunil Hajare and Ranjit Ingole	Coronanatar dugdh vyavsyatil avhane ani sandhi	Agrotuch	August 2020	46
30	M. V. Ingawale and Vitthal Daigude	Pur paristhimadhe pasuche apatkalin vyavsthan	Agrotuch	Sept. 2020	33
31	V.D.Pawar, M.P.Sawane and	Shelipalan vavsay, arthsathra and vipnan vyavsthan	Agrotech	March-April 2021	54-57



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	M.V.Ingawale				
32	Dr.S.P.Waghmare and Dr.M.V. Ingawale	Rabies-Janun Ghya, Ghabaru Naka	Agrotuch	Oct. 2021	23-27
33	Dr.S.P.Waghmare and Dr.M.V. Ingawale	Janavaratil tondkhuri paikhuri rog va tyacha pratibandh	Agrotuch	April 2022	23-27
34	Dr. S.P.Waghmare, Dr. D.G. Dighe and Dr. M.V. Ingawale	Janavaratil Lumpy Twacha Rog and Pratibhntamak Upay	Agrotuch	Sept 2022	28-31
35	Dr. S.P.Waghmare, Dr. D.G. Dighe and Dr. M.V. Ingawale	Lumpy Twacha Rog- Balirajavar Nave Sankat	Loksatta	06.09.2022	10

5. Research Recommendations

Sr. No.	1
Year	2023
Project Title	Evaluation of therapeutic efficacy of <i>Achyranthes aspera</i> in subclinical endometritis cows
Investigators	Sayed Anwar Ali, C.T.Nikhade, L.R.Pawaskar S.G.Deshmukh and S.W.Hajare
Recommendations	To effectively treat of subclinical endometric cows and improve the first service conception rate, 20 ml of sterile hydro ethanolic leaf and root extract of <i>Achyranthes aspera</i> containing 200 mg each of leaf and root extract should be administered once daily intrauterine for three consecutive days.

MOU signed by the Colleges - Nil

Sr. No.	MOUS Between	Date of signing	Place	Duration
	Party – I & Party - II			

8. Research Priorities / Thematic areas: Department Wise – Already mentioned



Sr. No.	Achievements	Description
1	Patents Awarded	Nil
2	Breed Registration	NA
3	IPR	Nil
4	Copyright	Nil
5	Trademark	Nil